

IN THE CLAIMS:

Please amend claims 3 and 11 as follows:

1. (Original) An apparatus for forming a pattern on a surface of a substrate comprising:

a probe chip, said probe chip comprising a plurality of probes arranged in an array along said probe chip, the array being one of one-dimensional and two-dimensional, each of said plurality of probes having a tip;

a first actuator for moving the probe chip parallel to the surface of the substrate;

said probe chip further comprising a plurality of second actuators operatively connected to each of the plurality of probes, for selectively raising or lowering the tip of each of the probes in a direction substantially perpendicular to the surface of the substrate;

a source connected to each of the plurality of second actuators for selectively actuating the plurality of second actuators.

2. (Original) The apparatus of claim 1 wherein each of said second actuators is configured to move the tip of a selected probe away from the substrate upon actuation of a selected second actuator.

3. (Currently Amended) A substrate having a pattern of a patterning compound on its surface, said pattern being produced by a method comprising the steps of:

moving a chip over the substrate to position a plurality of probes over said substrate simultaneously;

selectively actuating at least one of the plurality of probes to place the probes in one of in contact and out of contact of the substrate, while at least another of the plurality of probes remains ~~out of~~in contact with the substrate; at least the plurality of probes placed in contact with the substrate having a tip and the patterning compound on the tip;

wherein the pattern is formed by application of the patterning compound from the tip to the substrate.

4. (Original) The substrate of claim 3 wherein the patterning compound comprises a biological compound.

5. (Original) The substrate of claim 3 wherein, when the at least one of the probes is placed in contact with the substrate, the tip of each of the in-contact probes is within a sufficient distance of the substrate to permit patterning of the patterning compound.

6. (Original) The substrate of claim 3 wherein the patterning compound comprises at least two different types of patterning compounds.

7. (Original) The substrate of claim 3 wherein the substrate is a patterned integrated circuit.

8. (Original) The substrate of claim 3 wherein the patterning compound comprises at least one of octadecanethiol (ODT) and mercaptohexadecanoic acid (MHA).

9. (Original) The substrate of claim 3 wherein lines are formed by selected probes in contact with the substrate, the lines being less than 100 nm in width.

10. (Original) The substrate of claim 3, wherein the substrate comprises gold.

11. (Currently Amended) An apparatus for applying a patterning compound to a substrate for nanolithography, the apparatus comprising:

a plurality of scanning probe microscope (SPM) instrument probes arranged in an array;

an actuator operatively connected to each of the plurality of ~~AFM~~atomic force microscope (AFM) probes for selectively actuating each of the probes, thus placing a tip of each of the selectively actuated probes in sufficient proximity to the substrate to allow application of the patterning compound thereto.

12. (Original) The apparatus of claim 11 wherein the plurality of SPM probes are disposed on a probe chip.

13. (Original) The apparatus of claim 12 further comprising:
a scanner tube for moving the probe chip.

14. (Original) The apparatus of claim 13 wherein the scanner tube uses piezo-actuation.